For Additional Information See Index No. 400

1. These sketches are for showing shoulder interface between roadways and bridges where crossings are normal to other roadways, railroads and streams. For site specific applications and details see the plans and the FDOT Structures Design Office "Detailing Manual" and "Design Guidelines".

2. Shoulder treatments shown in these sketches are for locations with shoulder gutter; shoulder hinge location will vary for facilities without shoulder gutter.

SHOULDER INTERFACE BETWEEN ROADWAYS AND BRIDGES
OFFSET BLOCKS

16d NAIL FOR PREVENTION OF OFFSET BLOCK ROTATION

Cutaway View

Round Washers Under Heads And Nuts (2 Reqd.)

Install Pipe Rail Over Pipe Rail End Fixture And Thru-bolt Steel Pipe

1 1/2" Sch. 40

STEEL POST

TIMBER POST

Gutter

Galvanize After Drilling And Welding

Upper Threads After Tightening

PIPE RAIL END FIXTURE

Metal Pipe (For Mounting See Right)

STEEL POST

Washers Under Heads And Nuts (2 Reqd.)

Pipe Rail End Fixture

Offset Block

Stainless Steel Pipe

Permissible Post and Offset Block Combinations

Steel W6x9 Or 6" C

Steel W6x8.5

Steel W6x9 Or 6" C

Steel W6x8.5

Steel W6x9 Or 6" C

Steel W6x8.5

Steel W6x9 Or 6" C

Pipe Rail End Fixture

Offset Block

Pipe Rail End Fixture

Offset Block

Pipe Rail End Fixture

Offset Block

PERMISSIBLE POST AND OFFSET BLOCK COMBINATIONS

For Additional Information

As Specified See Sheet 14

FOR LOCATIONS USED BY PEDESTRIANS OR CYCLISTS

PEDESTRIAN SAFETY TREATMENTS

2006 FDOT Design Standards

GUARDRAIL

Michigan Wheel M-14 18 17" (M14 18 17"

Rubrail When Called For

For Locations In The Pane

1 1/4"

Rubrail When Called For

For Locations In The Pane

1 1/4"

Rubrail When Called For

For Locations In The Pane

1 1/4"

Rubrail When Called For

For Locations In The Pane

1 1/4"

Rubrail When Called For

For Locations In The Pane

1 1/4"

Rubrail When Called For

For Locations In The Pane

1 1/4"

Rubrail When Called For

For Locations In The Pane

1 1/4"
This Standard Post Must be Timber When Steel Post Used In Guardrail Ahead

Curb flare shall follow guardrail flare, see elsewhere in this index for additional guardrail flare information.

Note: For Proprietary End Treatments See the Qualified Products List.
Note: For beam washer requirements on end terminals, see individual and end anchorage assembly details. Washers are to be used where necessary to accomplish alignment or where the posts bolt head shows tendency to pull through the rail slot. Washers installed on guardrail, between end anchorages, prior to July 1, 1990 may remain.

For application information, see individual and end anchorage assembly details.

Note: For application information, see individual and end anchorage assembly details.

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Note: For application information, see individual and end anchorage assembly details.
FOR REPLACEMENT OF EXISTING WB x 18 GUARDRAIL POSTS ON APPROACH SLABS AND BRIDGES

Special steel guardrail posts are to be metalized in accordance with Section 562 of the Standard Specifications. The manufacturer's specifications shall be adhered to. All steel guardrail posts, conforming to or exceeding the design properties of ASTM A6/A6M. Welding shall be done in accordance with the manufacturer's instructions.IfNeeded, reinforcing steel shall be drilled through. Holes shall be thoroughly cleaned before setting bolts and anchors, and dry when setting wedge anchors.

FOR CONSTRUCTION OF GUARDRAIL WHERE CULVERT, PIER FOOTING OR OTHER STRUCTURE PRECLUDES DRIVEN POST INSTALLATION

1. See Index No. 402 for special steel posts required for construction and repair of guardrail transitions to bridge traffic railing barrier retrofits on existing bridges. See Structures Index Nos. 470 through 476 for steel posts required to construct traffic railing barrier retrofits on existing bridges.

2. Either anchor bolts, concrete wedge anchors or approved Adhesive-Bonded Anchors for Structural Applications may be used. Anchor bolts, wedge anchors and adhesive anchors shall have a minimum tensile strength of 80,000 psi and galvanized in accordance with ASTM A53. Galvanized steel components may be substituted but components plated in accordance with ASTM A663 are not acceptable. Adhesive anchor ribs shall be equal in diameter to that detailed for anchor bolts. Wedge anchors shall meet the following requirements: a) tensile load each anchor: approach slabs 14,000 lbs.; other structures 8,000 lbs. and b) wedge anchors shall be drilled in accordance with the manufacturer's recommendations, assuming 3,000 psi compressive strength for concrete. Wedge anchors shall also meet the following requirements: a) wedge anchor: approach slabs 4,000 lbs., other structures 3,000 lbs. b) shear size each anchor: approach 13.500 lbs., other structures 3,000 lbs.

3. Posts are to be plumbed by adjusting nuts or mortar seating. Posts terminated with anchor bolts and adhesive anchors are to be set using wedge anchors or to be cast with anchor bolts. Base plates shall be prepared with weld finish.

4. Adhesive-Bonded Anchors for Structural Applications shall be cleaned with Section 891 and be installed in accordance with Section 891. Drilled holes diameter shall be in accordance with the manufacturer's instructions.

5. Anchor holes and recesses shall be drilled, wedge anchors to be set in accordance with the manufacturer's specifications. Encouraged reinforcing steel shall be drilled through. Holes shall be thoroughly cleaned when setting bolts and anchors, and dry when setting wedge anchors.

6. Steel post and base units shall be galvanized in accordance with ASTM A153. Any stamped galvanized areas are to be metalized in accordance with Section 926 of the Standard Specifications.

SPECIAL STEEL GUARDRAIL POSTS

STANDARD TIMBER AND STEEL GUARDRAIL POSTS

GUARDRAIL POSTS
1. The locations shown for special posts mounted on inlets are to be used as guidelines for positioning the posts and for estimating the number of required posts.

2. Special posts and their anchorages mounted on curb inlets shall be in accordance with special steel guardrail posts Sheet 19, and paid for under the contract unit price for Special Guardrail Post, EA.

3. Variations shown for the locations of special posts mounted on inlets are established from standard post spacing (6'-3") clearance of standard posts from inlets (4" min.), use of single and double offset blocks on standard posts adjacent to the inlets, optional foam, metal, and concrete anchor plates (12" for grouted and 18") for flange mountings; and, concrete anchor edge distances (2" for grouted and 3 3/4" for concrete anchorages).

4. Encased guardrail posts shall conform to section to standard timber and steel posts, and be paid for under the contract unit price for Special Guardrail Post, EA. Payment shall include cost of foam wrap and separate encasement.

5.泡沫或木材挡板（单片或双片）

6. 可作为主路下低容量的使用

7. 特殊的钢制或木质护栏

8. 注意：对于线形立柱应用，即不可用于与破路立柱应用

9. 与护栏底座和附件应用

10. 扩展位置通过使用双片泡沫板在标准立柱基础上
CABLE ANCHOR OPTION

END ANCHORAGE ASSEMBLY TYPE II

CONCRETE ANCHOR BLOCK OPTION

TYPE II NOTES

1. Unless specified in the plans, the contractor can supply either the cable anchor option or the concrete anchor block option.

2. Type II end anchorage assemblies are approved for all speeds and are intended for use as:
   a. Friction end anchorage for single lane free standing guardrail systems.
   b. Single lane free standing guardrail systems when end anchorage is located outside of the clear zone.
   c. For guardrail systems located outside of the clear zone.

3. These end anchors are to be paid for under the contract unit price for Reset Guardrail, LF.

GUARDRAIL
1. The MELT is applicable for design speeds up to 45 mph. The MELT is intended for use as an approach guardrail end anchorage for shoulder guardrail. Its alignment is a flare from the normal guardrail alignment with an effective length of 37.5' including three standard W-beam panel outside of any standard guardrail, guardrail transitions or other special embedded assemblages.

2. This standard drawing is produced by the Florida Department of Transportation for use by the Department and its assignees. This standard drawing provides the general graphics and information necessary to field identity component parts of the MELT, their incorporation into a whole system, and production instructions for shop drawing submittals. The MELT shall be constructed in accordance with the distributor's detailed drawings, procedures and specifications.

3. The MELT shall be paid for under the contract unit price for Guardrail, End Anchorage Assembly (Flared), EA and shall be full compensation for furnishing and installing all components in accordance with the plans; the distributor's detailed drawings, procedures and specifications, and this Index. Where a flared end anchorage is called for in the plans, any approved substitution with a parallel end anchorage will not be eligible for VECP compensation. Where a flared end anchorage is not called for in the plans, any approved substitution with a parallel end anchorage will be eligible for VECP compensation.

4. See the General Notes for galvanizing requirements of metallic components.

5. The MELT can not be used in medians where horizontal clearance requires the use of a backrail.

6. The MELT shall be used for approach guardrail end anchorage assembly detailed herein and shall be full compensation for furnishing and installing all components in accordance with the plans, the distributor's detailed drawings, procedures and specifications and this Index.

7. No bolts or nuts shall be used in the MELT that are not required as structural fasteners. The bolts and nuts shall be galvanized steel and符合部品構成。
1. Controlled release returns are intended for use in openings in continuous guardrail for driveway and side road access when flares and transitions or standard radial returns can not be applied (Sheet 11). For intersecting the ends of bridge traffic rails and barrier walls where the driveway and side road access is in close proximity to the structure and does not permit the proper use of approved flared or parallel types of Guardrail End Anchorage. See Sheet 11.

2. Controlled release returns are not intended as a substitute or replacement for the appropriate use of approved vehicle impact attenuators.

3. Controlled release returns with either 8', 16', or 24' radii are designed for highway speeds of 60 mph or less. The 32' radius return is to be used only for highway speeds of 45 mph or less. See the General Notes for galvanizing requirements of metallic components.

4. The controlled release return shown is designed as full returns based on an intersection angle of 90°. The return can be terminated with the Guardrail End Anchorage Assembly Type CRT or connected to standard guardrail as shown or as otherwise detailed in the plans.

5. The Guardrail End Anchorage Assembly Type CRT is to be used only for the controlled release return shown with 8', 16', or 24' radii. The assembly is not to be used in any tangent return or tangent rail application. Other types of end anchorage assemblies are not to be used in the controlled release return.

6. The curved guardrail portion of the controlled release return shall be full section shop bent panels (12.5' or 25' panels). See Sheet 14.

7. The return can be terminated with the Guardrail End Anchorage Assembly Type CRT or connected to standard guardrail as shown or as otherwise detailed in the plans.

8. The return shown can be terminated with the Guardrail End Anchorage Assembly Type CRT or connected to standard guardrail as shown or as otherwise detailed in the plans.

9. The return shown can be terminated with the Guardrail End Anchorage Assembly Type CRT or connected to standard guardrail as shown or as otherwise detailed in the plans.

10. The return shown can be terminated with the Guardrail End Anchorage Assembly Type CRT or connected to standard guardrail as shown or as otherwise detailed in the plans.

11. See the General Notes for galvanizing requirements of metallic components.

12. The controlled release return shown is designed as full returns based on an intersection angle of 90°. The return can be terminated with the Guardrail End Anchorage Assembly Type CRT or connected to standard guardrail as shown or as otherwise detailed in the plans.

13. The return shown can be terminated with the Guardrail End Anchorage Assembly Type CRT or connected to standard guardrail as shown or as otherwise detailed in the plans.

14. The return shown can be terminated with the Guardrail End Anchorage Assembly Type CRT or connected to standard guardrail as shown or as otherwise detailed in the plans.

15. The return shown can be terminated with the Guardrail End Anchorage Assembly Type CRT or connected to standard guardrail as shown or as otherwise detailed in the plans.

16. The return shown can be terminated with the Guardrail End Anchorage Assembly Type CRT or connected to standard guardrail as shown or as otherwise detailed in the plans.

17. The return shown can be terminated with the Guardrail End Anchorage Assembly Type CRT or connected to standard guardrail as shown or as otherwise detailed in the plans.

18. The return shown can be terminated with the Guardrail End Anchorage Assembly Type CRT or connected to standard guardrail as shown or as otherwise detailed in the plans.

19. The return shown can be terminated with the Guardrail End Anchorage Assembly Type CRT or connected to standard guardrail as shown or as otherwise detailed in the plans.

20. The return shown can be terminated with the Guardrail End Anchorage Assembly Type CRT or connected to standard guardrail as shown or as otherwise detailed in the plans.

21. The return shown can be terminated with the Guardrail End Anchorage Assembly Type CRT or connected to standard guardrail as shown or as otherwise detailed in the plans.

22. The return shown can be terminated with the Guardrail End Anchorage Assembly Type CRT or connected to standard guardrail as shown or as otherwise detailed in the plans.

23. The return shown can be terminated with the Guardrail End Anchorage Assembly Type CRT or connected to standard guardrail as shown or as otherwise detailed in the plans.